REMARKS

As a preliminary matter, the PTO Form 326 provided with the Office Action indicated that none of the priority documents were received. However, the Notification of Missing Requirements, dated December 4, 1998, confirms that the priority document was received. Thus, Applicant believes that the Form 326 is in error. Nevertheless, Applicant submits herewith, another copy of the Finnish priority application No. 974446.

By this Amendment, claims 1-33 have been amended merely to further conform the claim language with idiomatic English.

Claims 1-11, 17-27 and 29-32 were rejected under 35 U.S.C. §102(e) as being anticipated by Scott (U.S. 6,094,421). Claims 12 and 27 were rejected under 35 U.S.C. §103 as being unpatentable over Scott in view of Bjork et al. (U.S., 6,084,862). Claims 16 and 33 were rejected under 35 U.S.C. §103 as being unpatentable over Scott. Applicant traverses all of these rejections because Scott, analyzed individually or in combination with the other cited prior art references, fails to teach or suggest all the features recited in the rejected claims. For example, the cited prior art fails to teach or suggest a transmission method comprising, "when the subscriber terminal is commanded to send the base station a signal that employs a time slot and frequency already used by another subscriber terminal, sending the subscriber terminal a command to adjust the transmission moment of the signal so that the base station receives the transmitted signals at different moments within the same time slot", as recited in independent claim 1 and its dependent claims 2-16. Similarly, the cited prior art fails to teach or suggest a radio system comprising "adjustment means, which based on the command sent by the transmission means adjust the transmission moment of the signal to be transmitted to the base station so that the base station receives the transmitted signals at different moments within the same time slot", as recited in independent claim 17 and its dependent claims 18-33.

Scott merely teaches that a mobility of user stations in cellular systems leads to unpredictability of propagation delay times. Thus, time division duplex systems have guard times between transmission and reception. Therefore, the aim of the method taught by Scott is to find the shortest possible guard times (column 7, lines 53-65, Abstract).

Accordingly, Scott merely discloses a method and a system wherein guard time overhead is reduced. Specifically, Scott teaches, at column 4, lines 51-65, that each transmission has a header indicating whether the time slot pair is unoccupied. If a slot pair is free, the user station responds with a brief message in its designated portion of the slot pair. The base station then compares the actual time of receiving the user transmission with the expected time of reception, and determines how far away the user station is. In subsequent

time frames, the base station commands the user station to advance or retard its' timing if necessary to avoid interference. Therefore, in Scott, the base station determines propagation delays for each received signal, gives a timing adjustment command and selects time slots and frequency bands for receiving and transmitting (see for example, Figure 8A, column 16, line 48 - column 18, line 39, the Abstract and claim 1).

Thus, generally speaking, Scott teaches a method and system to perform a combined TDD/TDM/TDMA message structure that adjusts reverse link transmission timing so that user-to-base messages transmitted from user stations arrive at the base station sequentially and do not overlap (column 12, lines 35-39). The user stations transmit one by one, in allocated receive time slots on the same frequency as used by the base station, with only minimal guard times between each reception. To prevent interference among the user transmissions, the base station commands the user stations to advance or retard their transmission timing as necessary (column 12, lines 49-55). In other words, Scott merely teaches a method, where user equipment transmissions are meant to be in different time slots and the transmissions are delayed or advanced if the guard times between these time slots are not long enough in the base station and the signals cause interference to each other. Thus, the minimum guard time varies according to the variations of the radio channel.

To the contrary, the claimed invention relates to a method to adjust the transmission moments of the signals transmitted by user equipment so that the base station receives the signals transmitted from the different user equipment at different moments (claim 1) in the same time slot (described at page 6, lines 1-8 and page 7, line 30 – page 8, line 6). <u>That is to say, the adjustment is done within the same time slot.</u> This adjustment of the signals allows the training sequences to be received at different moments at the base station, enabling the separation and recognition of the signals transmitted at the same frequency and in the same time slot (page 7, line 34 - page 8, line 6).

Bjork et al. fails to remedy the deficiencies of Scott because Bjork et al. is merely signal correlating techniques. Thus, the combined teachings of Scott and Bjork et la. fail to teach or suggest the invention as recited in claims 1 and 17 and their respective dependent claims.

Attached hereto as an Appendix captioned <u>"Version with markings to show changes made"</u> is a marked-up version of the changes made to the claims by the current amendment.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and a notice to that effect is earnestly solicited.

Respectfully submitted,

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APPENDIX

IN THE CLAIMS:

1. (Amended) A transmission method used in a radio system that [comprises] includes at least one base station [(100)] and a [number] plurality of subscriber terminals [(201-203)], at least two of which transmit access bursts to one and the same base station, the access bursting activating between a subscriber terminal and a base station a connection that is established by a signal that is of a certain frequency and is sent in time slots, [characterized in that] the method comprising:

when the subscriber terminal is commanded to send the base station a signal that employs a time slot and frequency already used by another subscriber terminal, sending the subscriber terminal [is sent] a command to adjust the transmission moment of the signal so that the base station receives the transmitted signals at different moments within the same time slot.

2. (Amended) [A] The method [as claimed in] of claim 1, [characterized in that] wherein the transmission moment is adjusted before an actual connection is established.

3. (Amended) [A] The method [as claimed in] of claim 1, [characterized in that] wherein the sent [a] command is [sent] to delay the transmission moment of the signal.

4. (Amended) [A] The method [as claimed in] of claim 1, [characterized in that] wherein the sent [a] command is [sent] to advance the transmission moment of the signal.

5. (Amended) [A] The method [as claimed in] of claim 1, [characterized in that] wherein the sent [a] command is [sent] to delay the transmission moment of the signal by substantially at most an 11-bit period.

6. (Amended) [A] <u>The</u> method [as claimed in] <u>of</u> claim 1, [characterized in that] <u>wherein the sent</u> [a] command is [sent] to advance the transmission moment of the signal by substantially at most an 11-bit period.

7. (Amended) [A] <u>The</u> method [as claimed in] <u>of</u> claim 1, [characterized in that] <u>wherein</u> the transmission moment of the signal is adjusted by at most the tail bits at the beginning of the burst and the guard period at the end of the burst.

8. (Amended) [A] <u>The</u> method [as claimed in] <u>of</u> claim 1, [characterized in that] <u>further comprising forming</u> impulse responses [are formed] from the signals received by the base station, the impulse responses being defined to have a length of a minimum of substantially 3 bits.

9. (Amended) [A] <u>The</u> method [as claimed in] <u>of</u> claim 1, [characterized in that] <u>wherein</u> at least two signals of the same frequency are separated from each other, the signals having been received by the base station from one and the same time slot.

10. (Amended) [A] <u>The</u> method [as claimed in] <u>of</u> claim 9, [characterized in that] <u>wherein</u> the signals are separated by [means of] training sequences of signals received at different moments.

11. (Amended) [A] <u>The</u> method [as claimed in] <u>of</u> claim 1, [characterized in that] <u>further comprising:</u>

<u>correlating</u> the signals received by the base station<u>;</u> [are correlated and,]

based on [the basis of] the correlation, selecting the signal with the best quality [and for example] or the highest energy [is selected,] ; and

using the selected signal [is then used] as a connection-establishing signal.

12. (Amended) [A] The method [as claimed in] of claim 1, [characterized in that] further comprising:

correlating the signals received by the base station [are correlated by means of] using a training sequence[,];

placing [the] signals formed based on [the basis of] the correlation [are placed] in windows[,]; and

comparing the summed energies of the impulse responses of the signals placed in the windows [are compared].

13. (Amended) [A] The method [as claimed in] of claim 1, [characterized in that] wherein the sent command is [the subscriber terminal is commanded] to change the signal transmission frequency, if the signal transmitted by the subscriber terminal interferes with a signal transmitted by another subscriber terminal.

14. (Amended) [A] The method [as claimed in] of claim 1, [characterized in that] wherein the frequencies used in different signals are predetermined.

15. (Amended) [A] The method [as claimed in] of claim 1, [characterized in that] wherein the signals are transmitted by a time division multiple access [TDMA] method.

16. (Amended) [A] The method [as claimed in] of claim 1, [characterized in that] wherein the method is particularly suited for radio systems used[, for example,] in offices.

17. (Amended) A radio system [comprising] including at least one base station [(100)] and a [number] plurality of subscriber terminals [(201-203)], at least two of which transmit access bursts to one and the same base station, the access burst activating between a subscriber terminal and a base station a connection that is established by a signal of a certain frequency sent in time slots, [characterized in that] the radio system [comprises] comprising:

transmission means [(101)], which command the subscriber terminal to send the base station [(100)] a signal that employs a time slot and frequency already used by another subscriber terminal, and

adjustment means [(205)], which based on [the basis of] the command sent by the transmission means [(101)] adjust the transmission moment of the signal to be transmitted to the base station [(101)] so that the base station [(101)] receives the transmitted signals at different moments within the same time slot.

18. (Amended) [A] The radio system [as claimed in] of claim 17, [characterized in that] wherein the adjustment means [(205)] adjust the transmission moment before an actual connection is established.

19. (Amended) [A] The radio system [as claimed in] of claim 17, [characterized in that] wherein the transmission means [(101)] send a command that delays the transmission moment of the signal.

20. (Amended) [A] <u>The</u> radio system [as claimed in] <u>of</u> claim 17, [characterized in that] <u>wherein</u> the transmission means [(101)] send a command that advances the transmission moment of the signal.

21. (Amended) [A] <u>The</u> radio system [as claimed in] <u>of</u> claim 17, [characterized in that] <u>wherein</u> the transmission means [(101)] send a command that delays the transmission moment of the signal by substantially at most an 11-bit period.

22. (Amended) [A] <u>The</u> radio system [as claimed in] <u>of</u> claim 17, [characterized in that] <u>wherein</u> the transmission means [(101)] send a command that advances the transmission moment of the signal by substantially at most an 11-bit period.

23. (Amended) [A] <u>The</u> radio system [as claimed in] <u>of</u> claim 17, [characterized in that] <u>wherein</u> the adjustment means [(205)] adjust the transmission moment of the signal by at most the tail bits at the beginning of the burst and the guard period at the end of the burst.

24. (Amended) [A] <u>The</u> radio system [as claimed in] <u>of</u> claim 17, [characterized in that] <u>wherein</u> the adjustment means [(205)] are located in a subscriber terminal.

25. (Amended) [A] <u>The</u> radio system [as claimed in] <u>of</u> claim 17, [characterized in that the radio system comprises] <u>further comprising</u> correlation means [(102)] for forming impulse responses from the signals received by the base station, the correlation means [(102)] defining the impulse responses so that they have a length of a minimum of substantially 3 bits.

26. (Amended) [A] The radio system [as claimed in] of claim 17, [characterized in that the radio system comprises] further comprising correlation means [(102)] that, based on [the basis of] the training sequences accompanying the signals transmitted by the subscriber terminal, separate from each other at least two signals that have the same frequency and have been received from the same time slot.

27. (Amended) [A] The radio system [as claimed in] of claim 17, [characterized in that the radio system comprises] further comprising correlation means [(102)] that correlate the signals received by the base station and select, based on [the basis of] the correlation, the signal with the best quality or [for example] the highest energy, and the selected signal is then used as an actual connection-establishing signal.

28. (Amended) [A] The radio system [as claimed in] of claim 17, [characterized in that the radio system comprises] further comprising correlation means [(102)] that correlate the signals received by the base station [by means of] using training sequences, and that place the signals formed based on [the basis of] the correlation in windows, and that compare the summed energies of the impulse responses of the signals placed in the windows, whereby the interference signals and the subscriber terminal producing the interference signal can be detected.

29. (Amended) [A] The radio system [as claimed in] of claim 17, [characterized in that the radio system comprises] further comprising correlation means [(102)] that correlate the signals received by the base station and detect, based on [the basis of] the correlation, the signals interfering with the reception of the signal.

30. (Amended) [A] The radio system [as claimed in] of claim 17, [characterized in that] wherein the transmission means [(101)] command the subscriber terminal to change the signal transmission frequency, if the signal transmitted by the subscriber terminal interferes too much with a signal transmitted by another subscriber terminal.

31. (Amended) [A] The radio system [as claimed in] of claim 17, [characterized in that the radio system comprises] further comprising storage means [(103)], which store information about the frequencies already used in different signals.

32. (Amended) [A] The radio system [as claimed in] of claim 17, [characterized in that] wherein a time division multiple access [TDMA] method is used in the radio system.

33. (Amended) [A] The radio system [as claimed in] of claim 17, [characterized in that] wherein the base station [(100)] of the radio system is [a so-called] an office base station.